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A cultural-historical activity theory approach to collaborative learning in programs of pre-service teacher education: exploring implications for educational policy and practice

Mihaela Mitescu Lupu¹*University of Arts "George Enescu" Iasi, Str. Horia No 7-9, 700126, Romania*

Abstract

In this paper the concept of collaborative learning is studied and illustrated in the dynamic between mezzo-systemic inter-institutional enactments of policies for partnership and collaboration between universities and schools offering pre-service teacher education programs and the micro-systemic level of inter-individual collaborative encounters between participants to the learning activity. The analysis uses conceptual and methodological tools of the Cultural Historical Activity Theory (CHAT). Analysis is located in two programs for pre-service teacher education – one in the Western Europe (UK), the other in the post-communist Eastern Europe (Romania). This work was supported by CNCISIS-UEFISCSU, project number 21, PN II-RU-PD 21/2010.

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1. Situating meanings and approaches to collaboration and partnership

Pivotal to most political discourses on development, the idea that investments in knowledgeable human resources go hand in hand with economic performance and competitiveness places the education of teachers close to the core of any attempt to reform and develop educational systems and explains the emphasis on the importance that a highly trained, theoretically informed and pedagogically agentic teaching working force is invested with. In a world of flexible transformation of people, practices, markets and institutions (Gee, 2000), curricular offers building on disciplinary expertise and contents-delivery based models of teaching and learning have little chance to succeed in ensuring education's responsiveness to the expectations and demands of the reality outside the school. Despite its complexity and the immense situational diversity of the educational contexts, the teacher education curricula tend to

¹ Mihaela Mitescu Lupu. Tel.: +40-232-236-744; fax: +40-232-236-744.
E-mail address: office_lupumihaela@yahoo.com.

take the shape of *centralized didactical formula* bound to be delivered within the context of the university or, at least, under its supervision. Heavily relying on the argument that with the change of scenery - from secondary education routes of professionalization to tertiary-level ones - a shift in the quality of educational processes should follow, the *universitarization* of the teacher education programs stands out as the other major common feature of most teacher education programs in Europe (Buchberger & Beernaert, 1995). This quasi-unanimously preferred political strategy for teacher education reveals a rather quantitative understanding of what the access, quality and success of this segment of higher education (HE) route of professionalization stands for. In the political discourses improving the quality of teaching and learning in schools is shaped as a matter of ensuring visibility, quantification and – implicitly – control of the results. Success becomes thus quantifiable in the measurement of the degree to which individuals, educational programs, institutions and systems fulfil the standards confined to the governing vision of quality.

An opposite stream of discourse on teacher education – that of the community of research – promote interdisciplinary visions and approaches to learning along with initiatives aiming at building spaces of practical action where professionals-to-be have the opportunity to develop their ability to align their individual initiatives and resources to those of the other more or less experienced colleagues in the process of engaging with the object of their profession (Edwards, 2005) – i.e. for programs of teacher education that would be the pupils' trajectories of learning - as the most relevant prerequisites for any educational program aiming at actually fostering learning. That being said, admitting that thinking and reasoning are inherently social, as well as inherently distributed (Gee, 2000) helps configuring learning as an activity for which participation and collaboration are key principles. Translating these theoretical coordinates in the practice of pre-service teacher education programs set up as school-university partnerships is far from a simplistic enterprise; searching for and then delivering ready-made recipes for inter-institutional sets of didactic actions, learning contents and pedagogical objectives to be pursued won't cut it.

Partnerships are attractive in a world where systems' expansiveness – the capacity to access problem spaces otherwise unavailable and to generate new patterns of activity (Engeström, 1997) - is mandatory for building strong identities (Wenger, 2000). Still, Furlong et al (2006) advise against the possibility of 'partnerships being reduced to finding more places or setting up common procedures and paperwork, without paying attention to epistemological and pedagogical issues underpinning any one teacher education program' (p.43). The main attraction to schools working collaboratively with universities in setting up programs for pre-service teacher education should be in the possibility of both engaging in joint efforts to ensure teacher training activities are epistemologically and pedagogically grounded. This implies that working on the object of developing professional identities of student teachers, both school and university would have to find tools to mediate the imperatives of pedagogically grounded actions with the institutional rules and particular divisions of labour. Not doing it would simply lead – as Furlong et al (2006) warned – to 'bureaucratic rather than collaborative relationships' (p. 165).

Based on a review of literature, Smith et al (2006) identified three stages of transformation in the history of the school - university partnerships: the *Higher Education Institution (HEI)-based model* (where duplication of partners' roles (Furlong et al, 2006) aimed at integrating the students' experience in college or university with the world of school by keeping minimal formal responsibilities for teachers from schools); the *complementary model* (sought to establish a clear separation of distinctive roles and responsibilities for university staff and school staff, completing one another in order to create an appropriate support framework for student teachers); and the *HEI-led model* where the university makes a sustained effort to provide overall leadership for both the university-delivered and school-delivered elements of courses, thereby taking clear responsibility for overall planning and defining of approaches to school placement learning and assessment). The last of the three seems to be the one closest to a collaborative form of partnership that favours a dialectical approach to theory and practice through the encouragement of a form of reflective practice in the student which draws upon the different forms of professional knowledge contributed by staff in HE and staff in schools, seen as equally legitimate (Furlong et al., 2006). Although most promising out of the three models, the HEI-led model of partnership relies heavily on partners identifying opportunities to meet 'for small group planning of programs and for collaborative work and discussion' (Furlong et al., 2006, pp. 80–81). It requires formalized set of roles and responsibilities for each partner and an overall HEI responsibility for ensuring coherence of student experiences of learning within the partnership.

On further working with the concept of collaboration a more detailed exploration of the possible meanings of this concept appears at this point to be necessary. The idea of collaborative learning has been much appraised in the literature of the past few decades when confined to the space of pre-service teacher education (Orland-Barak &

Tillema, 2006). Collaboration is often credited with the power to generate a very stimulating learning environment for teachers' professional development (Meirink et al, 2007) based on arguments like its capacity to stimulate the emergence of learning (Hindin et al, 2007), interrogative (Zellermeyer & Tabak, 2006) or knowledge (Craig, 2007) communities capable of facilitating teachers the environment they need for expanding their professional persona, engaged in producing professional knowledge that enriches and fortifies their sense of belonging to a professional community. In collaborations with their peers, teachers have the opportunity to engage in information exchange through reflective dialogue (Tillema & van der Westhuizen, 2006), generating new pedagogical and curricular instruments (Hindin et al, 2007) or, simply in creating and analyzing pedagogical artefacts (Bereiter, 2002), in analyzing and improving own teaching repertoires (Franke, & Kazemi, 2004) and employing research tools in exploring teaching that is new and innovative (Baumfield & Butterworth, 2007).

Drawing on the findings of the third generation cultural historical activity theory (CHAT) research, Engeström's (1997) ideas on the different approaches to collaboration may get us a step further in developing a more reliable view on the complex reality of the inter-institutional settings of pre-service teacher education programs. In Engeström's view (1997), when looking at the potential impact of inter-professional collaboration on practitioners one can differentiate between degrees of collaboration, suggestively named 'co-ordination, co-operation and communication'. *Co-ordination* for Engeström and his colleagues is the least demanding form of working together and presumes an agreed script or set of rules of working which co-ordinates the behaviour of each practitioner. There is no questioning or contributing to the script and there is no attempt to developing new rules as a result of the joint work. The *co-operation* form implies 'modes of interaction in which the actors, instead of each focusing on performing their assigned roles, focus on a shared problem, trying to find mutually acceptable ways to conceptualize and solve it. The participants go beyond the confines of the given script, yet do it without explicitly questioning or re-conceptualizing the script' (Engeström, 1997). The third level of collaboration, named *communication* involves 'disruption to the rules, division of labor and social practices in an organization and the new forms of collaboration that arise are accompanied by new linguistic and material tools to allow the new work to be done' (idem).

Either in the perspective of an inter-institutional partnership – as Furlong et al (2006) had seen it - or in a broader theoretical perspective – as in Engeström's (1997) view - collaboration creates the premises for new forms of learning, yet their effects on the participants, actions and contradictions in the activity of learning need further in-depth analysis. In this paper the concept of collaborative learning is studied and illustrated in the dynamic between mezzo-systemic inter-institutional enactments of policies for partnership and collaboration between universities and schools offering pre-service teacher education programs and the micro-systemic level of inter-individual collaborative encounters between participants to the learning activity.

2. Setting up the study

The proposed comparative analysis uses conceptual and methodological tools of the Cultural Historical Activity Theory (CHAT) employing data generated in analysis of documents, in-situ systematic observations and interviews. The language in this analysis employs an understanding of the learning activity drawing on second generation CHAT ideas : learning is not simply an activity located at the level of the private individual human mind as it is understood as a system within which one or more *subjects* (participants in the activity system) act upon an *object* of activity (i.e. the development of professional identities in pre-service teacher education students) with the purpose of generating certain *results* (i.e. debutant teachers capable of competent pedagogical action). The subjects' actions upon the object of activity are mediated by cultural *tools* (artefacts objectified in *material* – i.e. syllabuses, textbooks, portfolios, etc – or *mental* shape – i.e. jargon, methods, learning theories, etc). These actions are highly contextualized - a feature that implies the existence of a community visible within the action by means of an enacted set of *rules* and prevalent *ways of dividing labour*.

The data generation process was located in distinct systems of activity – school-university partnerships for pre-service teacher education – one in Romania, the other in UK. Despite both educational programs being organized as school-university partnerships employing more than one institutional system present in the activity of learning – which would suggest that a third generation CHAT approach would be more relevant - a choice has been made to locate the analysis at the level of second generation CHAT, a conceptual framework that makes the two programs comparable and creates an opportunity to study the *partnerships as systems of activity* arising in particular cultural

contexts and bearing distinct histories. Third generation of CHAT (Engeström, 2001) - a theoretical framework building on Vygotsky's ideas of cultural mediation of actions - informs this analysis in that attention will be paid to exploring the extent to which the partnerships allow learning that arises within the changing mosaic of interconnected systems (Engeström, 2001) of object-oriented, collective, culturally mediated activity, function as loci for pluri-discursivity (of traditions, stances, interests, knowledge – all incorporated in the available artifacts, etc) and are bound to transformation and expansion for which the contradictions are the main source of change.

The data generation process was carried out during one academic year. For each of the two pre-service teacher education program making the object of comparison in the analysis presented in this study a separate approach to data generation was pursued. The two programs were considered for comparison on the grounds of their major similarities: they're both pre-service educational programs, organized as school-university partnerships aiming at preparing student-teachers willing to work as teachers of Science and Technology. The data generation and analysis in both programs of study employed a *socio-cultural* understanding of the learning activity; learning is viewed as an activity where participants, contexts of action and specific available tools (artefacts) are engaged in interaction and mutual determination. Learning is shaped as systemic expansion (Engeström, 1997); all systemic levels and components are considered in a continuous dynamic relation to one another and to the larger *mezzo* and *exo-systemic* (Bronfenbrenner, 1979) contexts/levels of action. The context is understood as more than a fixed *exo-system* as in Bronfenbrenner's (1979) definition of the concept; the community of pedagogical practice where the program of study is located is regarded in its historicity and cultural determination; enacted *rules* and specific manners of dividing labour in the programs explored comparatively in this study are important elements of the analytical process, expected to provide the researcher with opportunities to access a deep understanding of the manner in which pedagogical knowledge is generated in the relationship between the participants, contexts of action and expanding objects of activity in the school-university partnerships for pre-service teacher education explored.

Historically the first context for exploration, the program located in Romania presented an opportunity to attempting a deeper understanding of the relationship between the collaborative learning strategies (used as teaching tools employed in seminar activities within the university-based component of the program) and the development of student-teachers' conceptions of teaching and learning. A quasi-experimental research design helped diagnosing the apparent lack of correlations between the two variables (teaching tools and learning results) on a short-time period of observation (14 weeks – the duration of a university semester and conventional length of one compulsory subject within the national curriculum for pre-service teacher education). The students participating in this study have been selected from the student population taking the undergraduates pre-service teacher education course at the specialized department within a technical university in the North Eastern Romania. A number of 46 participants – 14 female and 32 male- to the study were selected focusing mainly on identifying relevant groups of participants instead of individual participants based on criteria relating more to feasibility (the possibility of reuniting in separate activities 20 -25 individuals with different academic schedules in their bachelor degree courses of study would have progressively decrease in the alternative of setting up mixed groups, based on random attribution of individually selected participants to each of the three groups); also the research design was confined to maintaining the exploratory setting as close as possible to the natural conditions of the institutional patterns of organizing the pre-service teacher education program. Two university lecturers– Ana and Elena – accepted to take part in the study by coordinating seminar activities with the three groups of students. Elena enjoyed full freedom of decision in terms of promoting formative strategies to Pedagogy I contents. Ana accepted suggestions in planning activities with one of the groups of students, in the sense of promoting with this group a deliberate teaching strategy focusing on collaborative learning (sustained by numerous group exercises and discussions, modelling exploratory approaches to peer-to-peer communication, promoting peer assessment). Both teachers followed the thematic suggestions of the Annex 4 to the Order of the Ministry of National Education (OMEN) Act 3345/1999.

Results of the *micro-level* classroom based quasi-experimental exploration of the implications for educational practice of employing collaborative learning as a didactic tool in university based seminars of pedagogy inspired two new levels of exploration: one situated at a *mezzo-systemic* level – that of the educational policies enacted at institutional level (within the space of the particular teacher education program) - and further – at *exo-systemic* level of the national policy of teacher education.

The second context for exploration, the program located in England was pursued in an opposite, top-down approach: from studying the historicity of policies concerning teacher education in England (*exo-systemic* level of analysis) the scope of analysis shifted to the *mezzo-systemic level* of an institutional case of a collaborative partnership between a well-regarded school-university partnership program for pre-service teacher education later identified with the help of recent English teacher education literature (Benton, 1990, McIntyre, 1997); the

relationship between collaboration and learning was explored at the level of institutional ethos, and further at *the micro-level* of actual pedagogical praxis employing teacher-mentors and student-teachers in action. The methodological repertoire for data generation consisted of analysis of documents, systematic observations, interviews and analysis of conversations between participants to weekly formative assessment sessions between teacher-mentors and *interns* (institutional lingo for *student-teachers*) recorded on voice-recording devices – all spread throughout the length of one academic year. The first stage of the data collection in the analysis of the UK-based program of study entailed examination of documents providing information on relevant legislation and institutional policies; at this stage the analysis focused on critically understanding the relationship between the institutional and national educational policies regarding pre-service teacher education. An analysis of the curricular documents followed serving as a basis for comprehending the relationship between the institutional policies and the pedagogical praxis within the school-university partnership offering a pre-service general course in education (PGCE). This was followed by a week-long observation period during the 21st week of the program (called a D week – activities are university-based all week long) in February, when observation protocols were put together outlining structures of activities within the educational program, participants and actions, contexts and tasks, approaches to learning and feed-back strategies. During this observational stage seven students were invited and agreed to participate in the interview-phase of the study, scheduled at a later stage in the PGCE program – at the end of the school-based (S2) six weeks period in the PGCE program, at the end on May. In selecting the student-participants for this part of the study, attention was paid to the diversity of cultural backgrounds, age and ethnicity of the curricular group (Science) participating in the study; this meant that selection criteria for the participants in the interviews-phase of the study needed to help identifying those students in who's answers was most likely to find diversity. Also the observation sessions extended over small group learning activities during the D week which was useful for identifying students appearing more or less integrated in the exercise-groups they were a part of during the group activities. Interviews with student-teachers helped creating a general image of the way in which student-teachers internalize the formative experiences during the first (S1) and the second (S2) school-based periods of the PGCE program and helped generating possible hypothesis on the relationship between learning, collaboration and the expansion of professional agency and pedagogical identity of the student-teachers. Out of the seven selected students, two agreed with an observer's presence in their teacher mentor- student teacher (*intern*) formative assessment weekly sessions during the final parts of the S1 and S2 periods of the program (from March until end of May). Observed and voice-recorded conversations between the participants in these meetings were transcribed at a later stage and then analyzed as micro-sequences of activity able to provide relevant information about the way(s) in which collaboration is structured within the pedagogical context. A top-down approach was thus structured aiming at studying the quality of collaborative patterns and the way in which they affect the success of the learning encounters, following the path from policies to practice in the space of this PGCE program.

In the comparative analysis presented in this paper, data and results generated in the studies conducted within the two programs for teacher education are used selectively based on their relevance for exploring broader understandings of the implications that collaborative learning holds for pre-service teacher education policies and practice in different European programs of study.

3. Findings in the two settings for collaboration explored

3.1. Attempting collaboration in the Romanian program for pre-service teacher education: tools and actions

Data video recorded in the university based Pedagogy seminars show differences in approaches to teaching and learning the two trainers participating to the study promoted with different groups of undergraduates. In this section of paper the manner in which collaborative learning is understood and set up by teacher educators in the contents-delivery driven context of the Romanian national curriculum for pre-service teacher education is explored. Elements of verbal and non-verbal communication within the space of the classroom that maintain and increase, or on the contrary diminish or alter the nature of collaborative learning are outlined and analyzed. Excerpts of the transcriptions made based on the video recordings of the activities in the three groups of students are used as a basis of analysis: the first excerpt is one of an activity episode conducted by Ana with Group 1 (TG1120408); the last is of an activity episode conducted by Elena with Group 3 (TG3270308). Analyzing and interpreting data generated in teaching and learning sessions between trainers and each of the three groups of students that were video-recorded

(with one digital camera operated by a non-professional) meant focusing on analyzing and interpreting communication as it happens in group learning settings opposing deliberate pedagogical attempts to introducing collaborative learning in the classroom settings at the university; coding the textual data considered Rampton's (2007) conversation analysis coding specifications.

The two episodes of classroom based teacher-students communication presented in this section of the paper reveal different manners to approach teaching in Pedagogy seminars. The first one (Excerpt 1 TG1120408 – *Organizing collaborative learning: Ana Group1*) presents a teaching episode conducted by Ana with Group 1, with the purpose of analyzing collaboratively a relevant case for the topic of “The System of European Transferable Credits”. The episode is illustrative for the manner in which Ana structures the group activity: prescribes roles, establishes the succession of the moments of activity and reminds students of their responsibility to practice active listening with the purpose of later engaging in exploratory talk with their peers. When coordinating a debate episode engaging ideas one of the learning groups in the class has issued, Ana uses a language that implies inclusion („what do we think”). The transcription uses abbreviations of names : Ana (A), students speaking (S).

Excerpt I TG1120408 –Organizing collaborative learning– Ana (Group1)

C13 GROUP 00:17:57

Up close work group front-left of the room. During dictation (Ana introduces a case to the students; phrasing is short and pauses are significantly longer than in usual monologue); some students note down on dictation. In the up close shot two of the three members of the group are writing.

A: one of you should write this down (.)ok (1) case (.) punctuation (.) a student in Mechanical Engineering sophomore year (2) obtains a scholarship (2) in Sweden (1) for the first semester of the academic year (6) in Sweden for the first semester of the academic year:: (5) at lthe technical university would have studied six subjects that year (3) because of the local curriculum (2) hum:: in the curriculum for (2) the Faculty of Mechanical Engineering for the first semester of the sophomore year (2) at the Swedish university studies four (6) after passing all exams (2) in the first semester (4) in Sweden he returns to Romania(4) question (.)are there any challenges in his school report(.) if so how would you respond to it

S (male) passed them

A: yes –ff course

S: and returned to Romania

((high pitched voice))

A: now try debate this in the group, then in (2) the class

C15 FRONT 00:24:31

Ana –unfocused in the shot. Up close – students in the right wing, back of the room.

A: wha::: challenges have you identified and what solutions

S (male): it's possible that here in Romania there was a difference about those two disciplines

A: ok (.) this is a challenge and solution (.) pay attention 'cause you'll offer feedback soon

S:a solution would be::: that Romanians would ask whether they're wrong or those in Sweden

A: as to six versus four disciplines

S: to see how would be better (.) and ask if we should learn it all and if we're going to use everything learned in all disciplines

A: ok (.) so (.) the problem is that the student will have to take some subjects and the solution is (.) a dialogue between universities

S: well in every country one should learn pretty much the same thing

A: hum

S: so that it would be easier for a student to travel not necessarily with a scholarship

A: [humhum

S: that is if he can afford it

A: ok (.) so (.) what do we think

The other episode of teaching exemplified in Excerpt II TG3270308– *Group work in Group 3– Elena* depicts a sequence from a seminar conducted by Elena. Selection of the episode was based on its representative character for the manner in which some forms of group activity are sought for in the classroom setting without it necessarily leading to collaborative learning. Elena received no specific indications from the researcher as to how she should

organize the teaching and learning in her seminars. She decided to organize the session that was video recorded as a group work session. To bring her intentions to life, Elena attempts structuring groups by reappointing students to their seats on a random selection and grouping criteria (blindfold selection of colours representing various groups). In setting up this moment of activity she's requiring for students' assistance by naming those who's specific input she needs in various actions. One rather interesting action in this episode is that when she is attempting solving a small unbalance in the number of members resulted after blind selections of colours in one of the groups. Repetition as an interrogative statement at the end of her utterance („you're not upset, aren't you...") may be interpreted as a request for approval on behalf of the students with her decision to 'tolerate' the unbalance. The students' reaction who are responding on a quieter, almost whispered tone "but yeah we are", and then laugh and the lack of response on Elena's part brings new significance to the teacher's utterances – that of a rhetorical question - which structures the teacher's position in the learning group in a different colour than those of being opened and welcoming students to engage in the process of organizing learning in the classroom setting. This is suggested further by the teacher's fashion of switching from plural ("as we're seated, we're trying to change a bit the formations") to singular first person utterances („because I want to"/ „I'm interested in...") which creates the same impression of *an almost believable inclusive style*, in which the teacher would be positioning as an *equal partner* in communication in the group debates and group work. Arguing her decision making in terms of the pedagogical design is invariably an opportunity for first person, singular statements („because I want to see more than one aspect" or „I'm interested that you're extracting four or five ideas out of the most interesting"). These statements denote a teaching where positioning in the role of an authority invested with the responsibility of making all teaching decisions and validating all responses coming from students against pre-established performance criteria (number of ideas, criteria to assess the ideas as more or less interesting, etc). The transcription uses abbreviations of names : Elena (E), students speaking (S).

Excerpt II : TG3270308 – Group work in Group 3– Elena

C 54 FRONT 00:22:50

Elena stands in front of the left row of desks; her hand places in the front desk with fingers spread. E gesticulates in short hand gestures, facing the group of students. She moves towards a desk on the right side.

E: before actually starting to work I'd like to form groups and not to work :::

E: as we're seated (2) we're trying to change a bit the formations (.) that is (.) Emil try to count your colleagues

C55 FRONT 00: 23:20

Few feminine voices (short laughter)

Group shot- group of students. One student in the first row of desks turns and starts counting in loud voice. The same body movement is made by another male colleague in the left side of the classroom.

E steps towards the desks. She's showing a note to the students lifting her right arm and speaking.

S (female) : seventeen

E: seventeen(.) who::: has a hat (3)

S (male) : nobody

E: nobody

S (male) ((short laughter))

E: in what could we mix these(.)will you make a cornet(.) Alexandru (.) make a cornet to mix these notes (.) hum::: (.)notes are written in different colours(.)we'll group students by colours (.)and I'll show you how in a moment(4)

E: go to everyone and have them extract one

E goes to one student in the second row of desks and hands him the notes

C56 FRONT 00:28:22

E stands in front of the classroom. She speaks holding a stack of papers. She's looking to the group. Left-handedly she's gesticulating whilst speaking.

E: five six groups we have(5) two of four and three of three (.) you're not upset that they are four aren't you

S (male) : yeah we are

S (male) : but yeah we are ((short laughter))

E: what we'll do(.) we'll receive a material with various subjects because I want to see more than one aspect (1) we'll read (.) you'll see that you're either looking at the same material or some are reading something different(.) you need to organize as a team (2) yeah (.) how you're suppose to read different materials (.) I'm interested in extracting four or five ideas out of the most interesting

E spreads reading materials in the group (out of the stack of papers she's holding)

C57 GRUP 00: 30: 55

Up close-Blue Team- formed of two male and one female participants. Each have received text materials and start reading. Two of the three students forming the group hold pens and take notes as the start reading. The third sits comfortably in his chair and reads without writing. A minute later this member of the group starts taking notes.

20 minutes into the reading- students in the Blue team interact twice: once in the beginning of the exercise when one asks for a paper; second between the female and one of the male participants (unintelligible)

C58GRUP 00:38:30

Student [S] (male) leans over to his colleague on the right. E stands next to them and writes on her paper what subject the group is reading about.

Elena [E] indicates the person pointing with the paper in her hand to the nominated person

you have found(.) and (.)finally (.) for you to express your opinion on these ideas (.) so there we'll be a group presentation because we don't have the time either to spend with each and every one (.) a representative (.) you'll elect a representative of the team to present the four ideas and another to (.) present (.) also:: certain attitudes connected to those ideas

E: you have twenty minutes to read and make a brief of the main ideas (.) we could be let's say five minutes late but this is an easy interesting reading

E: if there are terms you don't understand please ask me

S (male) : I'm reading the same

S (female) : me too

S (male, facing E): excuse me (.) we have two subjects

E: [pardon

S (male) how do we present

E: well you present (unintelligibly)

E: and you (.) yes

The episode illustrated in Excerpt II is also representative for the manner in which the teacher, although willing to grant groups of students the freedom and responsibility for negotiating their roles, over the reading period, whilst members of the groups seldom interact in brief conversations, intervenes in the activity of one group and distributes roles from a position of authority as indicated by the short sentencing and imperative mode of addressing student's question, and crossing with her own indication- that of teams delegating their representatives.

The episodes illustrated in the two excerpts offer elements of detail for the manner in which teachers employ different strategies and instruments in working with the groups of students. What comes as an immediate observation is that in their attempt to implement collaborative learning strategies or work with relevant teaching instruments, trainers employ a repertoire of communication tools comprehensive of, for instance, *semi-directive procedural suggestions* (e.g. Ana's preference for the conditional mode : „one of you should write this down ...”), *positive validations of students' responses and initiatives* (e.g. the use of „ok”- tr. ro. “aşa, bun”), *guiding students' efforts and actions towards exploring open problem spaces* (e.g.: „how would you respond to it”; „what do we think”); preference for *open ended questions* as guiding instruments for students' attempts to explore possible answers to problems; *re-phrasing* (e.g. Excerpt I – Ana : ‘ok (.) so (.) the problem is that the student will have to take some subjects and the solution is (.) a dialogue between universities’) serves the teacher as a tool for identifying opportunities to create an open space of reflection where all participants to the learning activity are equally invited to participate; the teacher herself is positioning in this space as a full member of the learning group. In the teaching that is intentionally planned as to stress collaborative learning, yet comes out as guidance, control, validation and regulation of learner's actions and responses, the teacher acts as someone who's primarily invested with the responsibility of delivering the curriculum; language in teacher – students interactions is shaped accordingly. The linguistic tools specific to this mode of communication include: *imperative modality* used quasi-unanimous in utterances that aim at structuring tasks; *the first person singular statements* in stating the goals and reasons of actions. These are communication tools that are recognizable in the episode presented in Excerpt II – the one illustrating an episode of teaching conducted by Elena who states that she's intending a ‘team work session’ but proves mislead in putting her intentions into practice.

When the *students* are speaking to each other – as shown in the dialogical episode in Excerpt III TG1120408 - *Students' talk during team work in Group1 (Ana)* - most dialogues take the shape of *cumulative talk* (Mercer,

2004). This particular mode of structuring communication presents a specific trait - every participant to the episode of communication adds up to what has been said, without necessarily considering what's been uttered. The episode presented in Excerpt III is extracted from Ana's seminar with Group 1 on the topic of "The System of European Transferable Credits". Given time to work collaboratively on exploring possible outcomes of a case of educational credits transferability, students engage in a group conversation that following video-recording and transcription can be reproduced as in the episode revealed in Excerpt III. The transcription uses abbreviations of names - student (S)- and numbers to indicate the order of appearance in the video-recorded sequence.

Excerpt III TG1120408 - Students' talk during team work in Group1 (Ana)

C14 GROUP 00: 20:00

Up Close – groups on the left side of the room. Front group: a students facing each other

S1 : ((unintelligibly)) disciplines ((unintelligibly)) after that has problems with four ((unintelligibly))

Student [S] 1 back on the camera, facing colleagues in the group speaks indicating by pen point on the paper on the desk S2 responds to S1 twisting her head to face her colleague on her right (S3)

S2: yes

S3 looks at S1 then at S2. S2 moves head to face S1

S3: yeah yeah- you're behind

S1 looks at S3

S2: yeah yeah – it depends if those four

S2 looks at S3

S1: [if he knows

S3 looks briefly at S2 by the end of her answer

S2: incorporate the subjects of the other two

S2 looks down at the desk

S3: yeah yeah bu- remain huh::: ye- when you leave you know the number here and it's more

S1 leaning over the desk behind him points with a pen at the paper on the desk and speaks to S2. S2 and S3 watch S1

S2: know it depends if you come you have six subjects and some that they don't have elsewhere you can take two again you know (.) if:::

S2 gazes at S3. S3 looks down at the desk

S3: [don't know if in the end he's gonna remain among the best

S2: yeah that's a problem there's two more

S1: don't think it's about (unintelligibly) in case he's coming back (unintelligibly) the best::: at least return S2: yeah yeah who::: yeah (2) depends which is:::

S3: [yeah yeah- look

(unintelligibly)

S2 and S3 twist and gaze at their colleague in the back who is speaking

S (male, in the back) : Raluca looks at the camera

[short dialogue with the colleague in the back ((unintelligibly)) students laugh shortly]

S2: know it depends 'cause if those four have forty credits that is in Romania six exams with forty credits (.) it depends

[colleague in the back continues to talk asking his colleague to look at the camera. Group laughs shortly]

Ana approaches the group and S2 looks at Ana. S3 nods approvingly

S2 : we know the answer

The attempt to explore the hidden aspects of the problem they were presented with is recognizable in solely one occasion in the exemplified episode of students' talk and shows one student's initiative that remains isolated, without effect on awakening colleagues' reactions and attempts to continue. A students' utterance in the end of the sequence- „We know the answer” – reveals the manner in which the students understand the task and how they position in reference to the learning that happens in contexts like the one they're currently a part of: the task is perceived as an open ended question that allows solely one correct answer, and the teacher is seen as the single relevant source for validating their answer. By this, the episode maintains a profound traditionalistic trait of what school based learning is perceived like by learners themselves.

In this part of the study the aim was to discuss elements of teaching and classroom based communication that prove either conducive or constricting of collaborative learning. The teaching tools employed were analyzed in constant reference to aspects of students' communication and action in the classroom context that reflect the extent to which the didactic tools generate the intended pedagogical effect. However, data shows that even in the presence of well intended and theoretically informed didactic tools aiming at configuring a pedagogical space for collaborative learning, students' conceptions of learning (here confined to traditional views of contents-delivery and centrality of teacher's authority figure) tend to shape the manner in which peer to peer conversations are structured, restricting inter-personal collaborations to *cumulative* approaches to solving problems. Exploratory talk (Mercer, 2004) – emphasizing participants' capacity to promote active listening and critical consideration of what colleagues have uttered and to stimulate contributions to producing knowledge from all other participants – remains out of the communication mode employing students in collaborative learning, even where all efforts have been made to induce it in the teaching repertoire confined to university-based seminars of Pedagogy. Along this line of observation, data shows also that even when intended and planned for, collaborative learning made visible in group work seems limited to the time and space of the classroom based activity; exercises involving student-teachers in communicative and/or cooperative approaches to pedagogical reasoning are planned to begin and end in the space of the seminar, as if isolated from the rest of the learning activity taking place in the space of the Department of Teacher Education or in the university. Also, data shows that collaboration aimed for and organized by different teachers allow for different degrees of participation and personal engagement with the object of activity. Teacher's conception of learning, teaching and collaboration are significantly linked to the manner in which collaborative settings are set up in the classroom. In Elena's case, collaboration takes – at the most – the shape of *co-ordination* (Engeström, 1997), as students are expected to restrict to the confines of a ready-made script of action in the process of producing a response to a problem they are presented with.

The apparent lack of correlations between the collaborative teaching tools employed and the learning generated in the students – teacher encounters located in the Pedagogy seminars at the university – also confirmed by results generated in the quasi-experimental approach to research the relationship between collaborative approaches to teaching and learning and student-teachers' approaches to learning and teaching – pushed the scope of enquiry and analysis in this study to two new levels of exploration: that of the educational policies enacted at institutional level (within the space of the particular teacher education program observed) and further – at the one of the national system of teacher education. Using a CHAT framework for analysis it becomes apparent that *mono-discursivity* is a common feature of all levels of practice and policy in the Romanian national system of pre-service teacher education.

3.2 Collaboration reflected in the policy, ethos and classroom practice of UK based program of pre-service teacher education

The research data considered for analysis in this study was generated within the space of a PGCE programme in a well-regarded English University – a post-graduate course of study for pre-service teacher education (PGCE). Here, documents analysis and in-situ observations showed that working on the object of activity within the program of teacher education is an enterprise that engages in partnerships members of the university staff, teachers in partner-schools and even student-teachers who are progressively more capable to identify and make use of all available opportunities to enhance their pedagogical agency.

The tendency to centralization of national teacher education policies is visible here too, but to a different extent than in the Romanian case. Inserted in a legislative context that passed during the past 50 years through stages of investing universities (as main spaces for scientific and theoretically grounded initial teacher education) and then schools (expected to transfer to the debutant teacher the much needed practical knowledge and skills the university alone failed to) with the responsibility of running the pre-service teacher education programs, the PGCE is presently set up as a school-university partnership where collaboration is a prerequisite for each planning, implementing or assessing action within the program. The school-university partnership is the institutional formula for which the English legislation expresses preference too and stipulates expectations concerning partners co-sharing the responsibility for planning and managing the curriculum and for selecting, teaching and assessing student-teachers (DfE, 1992).

In a configuration of the activity system that allows locating the responsibility for conceiving, innovating and reforming the pre-service teacher education program in the encounter between institutional partners, not only is the object of that activity bound to transformations, but the very *tools* (cultural artefacts) available in the space of the partnership (for which collaboration at all levels of action becomes mandatory). This is the case of the PGCE program where studying how collaboration is structured at the levels of a) the inter-institutional partnership and b) the inter-individual learning encounters taking place in this particular type of partnership revealed that in certain types of collaborations (those structured as opened opportunities for exploration and engagement with the problem spaces arising in the context of the teaching activities) the set of tools that mediate the subjects' actions with the object of activity are themselves susceptible of questioning and innovation. Given the structural connections between the instrumental –actional –normative levels of the activity system, the system as a whole becomes susceptible of transformation and expansion at the pace of artefacts being worked upon through exploration and questioning by participants to the activity. In the process of validating available teaching tools they come across within the system of activity, novice student-teachers question current uses and didactic implications that pedagogic artefacts (curricular documents, teaching methods, technologies, etc) elicit and by that, the current rules and divisions of labour in the system of activity. As a consequence, the novices' explorations of available tools could be seen as a legitimate opportunity for systemic expansion – by either (re)confirmation of the structural and functional pedagogic *status quo* by means of new proofs of its efficiency, or by alterations of the systemic tools and rules and by creating new ways of structuring actions within the system of activity.

The importance for learning of the *tools* available in the activity system was visible in student-teachers understandings of what functioned as facilitating or repressive means in relation to their learning to teach throughout the experiences in the PGCE program. For John (23 years old, British, pursued his undergraduate studies at the same university offering the PGCE program) there was a difference to be made between his experiences in the two schools he was an intern at throughout the S1 and S2 parts of the program. When exploring his experience in the school where he spent the S2 part of the PGCE program, John focuses mainly on observing his relationship with the teacher-mentor and the quality of learning in the Curricular Department at the school. Excerpt IV presents John's words on the department he'd been with during S2:

EXCERPT IV (INTERVIEW WITH JOHN, END OF MAY)

9 it took a very long time for me to get told things I should -ve been told
10 straight away (.) because our department's very insular (.) like I said it's a
11 collection of individuals (.) we all teach science (.) there is no science
12 department in such (.) *per se* (.) the science department meetings are very (.)
13 awkward like it's almost funny just to be in them because (.) everyone is
14 trying to ((moves hands as if pulling in different directions)) and nobody's
15 getting along and is just really funny

Exploring the concept of insular department (L10) John describes the climate of work in the Department as awkward (L13) and funny (L13, L15). He then creates an opposition with what things were like in S1, as shown in Excerpt V:

EXCERPT V (INTERVIEW WITH JOHN, END OF MAY)

72 the schemes of work are very well set up (.)
73 which we didn't have at NAME – school S1 (.) on the other hand that does
74 make you slightly lazy because you just go (.) can I have this lesson (.) the
75 lab technician is bringing all the pieces of paper all the resources everything
76 and I feel quite a lot of the teachers don't really put any forward (.) they just
77 just do the lesson and they go (.) I mean they don't really (.) modify and so

78 (.) whereas us interns have got nothing better to do other than look at it and
 79 go (.) we can do better than this (.) whereas I don't think a lot of the teachers
 80 add to (.) they just do it (.) and if they do make changes they don't write
 81 them down (.) so (.) like they don't share them with everyone else
 82 (.) whereas at NAME – school S1 – if there was a change (.) they would
 83 instantly just go (.) there's a new resource (.) everybody go (.) ough I like
 84 this or I don't like this (.) we'll just not use it but we'll put it in the folder
 85 anyway (.) and it just worked like that (.) it would be a lot (.) I d- know there
 86 seems to be a lot more sharing of resources at NAME -school S1- and it's
 87 generally happier and nicer and more fun

Not only is a difference in climate and tools available in the two schools presented in the two excerpts, but a difference in the manner of how tools are being employed in actions and consequently shape those actions and the generated results in learning. An all-agreed upon, fixed set of available instruments (schemes of work, lab resources) and a division of labour where no room is left for the student-teacher to actually have access to the process of generating, analyzing and assessing teaching instruments (as depicted in John's description of the S2 (L72-L77) is associated with laziness (L 74). Material instruments and the manner in which the students approach them have the capacity to generate and engage in action mental instruments (e.g., John's belief in what he can do: we can do better than this - L 79). The problem is thus, not that of insuring *access for all* in surface-type understanding of all learners having *access* to a multitude of already-made available resources (tools) and prescribed ways of employing them as to generate already measured and agreed upon best results. It goes beyond, to ensuring *employment of all* available resources (including the ones located in the learner) in a more active manner than that of a delivery-type approach to teaching and learning. The example John offers from his S1 (L 82-87) experience is illustrative: around an opened-to-all tool (*the repertoire* for teaching materials where all can add, take from, analyze and assess its contents) the learners' identities are engaged in an *agora* of open-ended generative actions that is bound to stimulate expansion at the levels of both student-teacher's and system's learning. New teaching ways (rules and roles/ divisions of labour) could emerge for both the teaching *repertoire* of the student-teacher and the one of the department.

Data generated in the weekly conversations between teacher-mentor and student-teacher observed throughout the S1 and S2 periods of the program reveals the *contradictions-driven nature of learning* in the collaborative setting of the learning activity. The episode exemplified in Excerpt VI introduces data from John's learning experience during S2. The episode of conversation was extracted from a longer dialogical sequence where the student-teacher and his mentor approach the student's *pitching* technique. The extended conversational episode (too long to exemplify here) is relevant for the way in which from exploring a contradiction between what the student believed was an appropriate level of difficulty for the year-group used his pitching technique with, the teacher-mentor and her student come to explore deeper theoretical aspects of the problem (pursuing learning on the more *vertical trajectory* of theory into practice and vice versa) and expand their horizon of searching for arguments from the space of the action located within the space of the classroom to the larger school-space and even further to that of the community at large (performing *side-way* kind of movements into learning on a *horizontal trajectory* of exploration in various contexts for practice). The episode in Excerpt VI shows learning to be an activity pursued by both teacher mentor and student teacher.

EXCERPT VI (MENTOR [M]-INTERN / STUDENT -TEACHER [I] FORMATIVE ASSESSMENT SESSION DURING S1, END OF MARCH)

626 M: they'd mention it in the foundation so you're right to mention it (.) but I think maybe
 627 I: [the detail (.) it wasn'
 628 M: [it it gives you (.)
 629 I: it wasn't said which detail was higher (.) 'cause
 630 M: [exactly (.) I mean you don't know what to do do you

- 631 I: yeah (.) like know to get it know
 632 M: [it's really harsh
 633 I: [I saw the bias on my supervision (.) like the higher the lower (.) they just need
 634 I: to know 'bout the chain reaction and that's 'bout it
 635 M: [yeah yeah
 636 I: and it was kind of like right uhm I wish I'd know that
 637 M: [an' the thing is they've got that 'cause your room analogy was excellent
 638 I: [yeah
 639 M: and that was really positive because I've actually I've never heard that analogy before
 640 I: [ok
 641 M: and I'm gonna use that (.) because it's such an easy way to explain it
 642 I: [yeah (.) it's in the textbook isn't it ((almost whispered words))
 643 M: I mea- I don't think (.) I don't use the text book to plan the lesson I use the eye pack (.) but it
 644 I: [ok
 645 M: sure made me look at it
 646 I: [yeah
 647 M: it's actually good
 648 I: [see I use the books two page spread
 649 I: to few page spread to plan the lesson (.) so I do it that way (.) and use the eye pack fo' resources
 650 M: [it goes on
 651 M: yeah I think I mean I tend to use the enrichment guide to be honest (.) because that is really dumb down
 652 I: [ok
 653 M: and it's kinda gives me the pitch fo' my group (.) but you know (.) I think 'cause some of it is good
 654 I: [yeah
 655 M: distraction though (.) I think other times is difficult
 656 I: [yeah I know I mea' I don't like dumbing it down

Whilst exploring the contradiction between student-teacher's expectations as to what the teaching tools (textbooks, schemes of work) available in the planning phase of a lesson promise and what they actually cover as teaching information and suggestions needed, the mentor-teacher ends in exploration of a teaching tool (an analogy) the student has successfully used in his practice with a group of pupils. The fact that the new tool becomes one to be included in the mentor's teaching repertoire shows that learning is far from reduced to a one-way enterprise. The novelty of the student-teacher's view on what could work in the classroom challenges mentor's old practices and provokes and expansion of her own horizon of thinking and acting whilst teaching. Another type of contradiction arises: that between the role played by the teacher-mentor and the traditional mastery-type of conceiving expertise and the role of mentoring (as transfer of expertise from a more experienced to a novice member of a professional community). To this contradiction, the student teacher responds by taking a more agentic role to learning – that of exploring within the space of acting and thinking like a teacher (L 648 -649). Through 'I' statements and using a succession of active verbs at present tense the student-teacher positions himself within the dialogical space used for displaying and exploring expert-like tools for pedagogical reasoning. The teacher-mentor's exploration of her own contradiction becomes even more relevant with the introspections in section L 651 -655 and opens up a possibility for the student to continue his meta-cognitive approach to his learning.

As shown in this episode, contradictions are not the same as conflicts. Engaging with the collisions between old and new that a novel element from outside (in this case the student-teacher) generates within the system of activity is first and foremost conditioned by the system's permeability to agentic moves of exploration at all levels and

components of the systemic action (rules, divisions of labour, tools). The effort of opening the educational program to this type of exploratory responses to its internal contradictions is indicated here to be worthwhile: learning occurs within the whole system of activity and employs expansion of not only students' identities but of other, more experienced participants too.

Collaboration set up as communication (Engeström, 1997) is recognizable in the *multi-voicedness of learning*. . Regardless of their type, duration or proposed learning contents all activities observed shared two common dimensions on how learning was set up: first the *dialogue theory-practice – reflection is the guiding line of progress in learning* to be a teacher; second *peer-to-peer work is the guiding line for collaboration, relational agency* (Edwards, 2005) and *dialogical reason* (Edwards, 2005). Developed out of Wells's (1999) notion of dialogic questioning and Mercer's (2004) concept of *exploratory talk*, Edwards's (2005) notion of *dialogic reasoning* outlines the public (dialogic) aspect of all thinking, visible in language in the manner of structuring the questioning, arguing and counter-arguing turns, a process for which *internalizing* (Rieber, 1987) the dialogues with others becomes essential.

Understanding learning as dialogic reasoning is especially important for the arguments set out in this study: conceived as exploration and dialogue, the reasoning escapes the privacy and seclusion of the individual mind and reveals itself through language as a space where multiple voices engage in either *disputational, cumulative or exploratory* (Mercer, 2004) patterns of verbalized action when confronting with a particular problem. Engaging in dialogue and exploration is a form of *participating* which validates the presence of both the activity system and participant subjects. It also becomes indicative for the presence of *relational agency* (Edwards, 2005), understood as the capacity to offer support and ask for support from others (...) capacity to align one's thought and actions with those of others in order to interpret problems of practice and to respond to those interpretations (pp.168-169). Knowledge thus becomes more than a sum of competences, information and experience deposited in various proportions in one or the other of the participants to the learning activity. Knowledge that is mobilized and accessed across systems of [potentially co-operating] practitioners opens spaces for questioning, exploration and reasoning where novice and mentor have opportunities to increasingly expert manifestation.

Students' statements within interviews – when asked about their learning experiences within the university – reflect the manner in which the two common dimensions become strategic features for the success of their learning. In Donald's (male, originally from Netherlands, in his late 40's, started the PGCE program after a 17 years long career in researching Biology) words as revealed in Excerpt VII:

EXCERPT VII (INTERVIEW WITH DONALD, END OF MAY)

30	D:	what was good was that when I asked a question I usually did get
31		an answer if they knew (.) or at least it was discussed (.) so that was
32		one thing (.) the other thing was that they gave us quite a lot of
33		information about what they know science teaching is in current
34		comprehensive schools (.) examples as in (.) you know (.) how
35		teachers decide on a scheme of work (.) how teachers decide on how
36		they actually construct lessons how teachers decide on what to use
37		what not to use but in a very fairly open way (.) <u>we</u> could make the
38		choice so it was us who discuss it with each other (.) not that they
39		said this is the best way (.) yeah so (.) in other words (.) what the
40		whole course was about was that we were also encouraged to take
41		responsibility for our own learning (.) yeah (.) it's the same way in a
42		way (.) the (.) you know we were given examples and a little bit of
43		background information but it was always us who decide what was
44		the best or what we thought was the best and that usually was in group
45		work (.) so the group work was a good aspect of it

Excerpt VII presents data relevant to the manner in which Donald attempts exploring the qualities in the educational program set up within the university: the dialogic, group-based dimensions of the learning process are outlined from the beginning of the Excerpt VII; an exploration of what could be the student's representation of a possible structure of power in the pedagogical relation is revealed in the lines 32-39; here the dialogical nature and the openness of the decision-making processes are being outlined. Donald's words in line 41 of the Excerpt VII (in the same way) send to another episode in the interview, where he expressed the secret in having pupils learn, as he understood it: having the students take responsibility for learning makes teaching successful. This aspect of

Donald's pedagogical credo is recurrent in the interview in his answer to a question regarding a possible definition to quality teaching. These words could also send to the idea of language that reveals a thinking process in the making: it seems that only while saying these words Donald realized that he's insights on teaching have strong connections with the subtleties of the pedagogy enacted within the space of the university.

Learning is therefore a shared responsibility between educator and learners and it is and is a public enterprise, an *agora* where multiple-voice discourses come into play in decision-making actions. Even more relevant for how multi-voicedness of one's own exploratory talk is shaped in the language is the episode presented in Excerpt VIII from weekly formative assessment session between a student teacher and a teacher-mentor:

EXCERPT VIII (MENTOR [M]-INTERN / STUDENT -TEACHER [I] FORMATIVE ASSESSMENT SESSION DURING S1, END OF MARCH)

600 M: [an' I mean (.) the thing is if you're not sure how far to go in terms of keeping it
 601 M: down (.)
 602 I: [yeah
 603 M: talk to the teacher of the group
 604 I: ok
 605 M: I mean with year ten I would just say as low as possible
 606 I: [yeah
 607 M: and Gareth would say to me different for year seven *with me* and year twelve obviously July (.)
 608 I: [yeah I know
 609 M: she sort of said the pitches she approaches a bit like you're doing (.) so you know

The discourses of absent members of the relevant professional community is evoked here and come as support and constitutive part of the mentor's argument in exploring reasons why should a certain differentiation strategy work in a certain pedagogical context (a set of *pitch* techniques being used with different year-groups of pupils). The learning is thus an activity by which not only does the student-teacher have access to a *vertical* approach to theory being experienced or growing out of one context for practice as it is *also a horizontal (side-ways)* movement between different contexts and with various partners in dialogue.

4. Collaborative learning – a function of cohesive policies and practice

The comparative analysis of educational policies mirrored by legislation and institutional documents are indicative of distinct epistemological and political orientations for each of the two Science and Engineering pre-service teacher education programs studied here. Although both are inserted to the common European space for political and socio-economical development, and are part of national systems of education that signed the Bologna Declaration, the manner in which the institutions employ their pedagogical traditions in the process of teacher education is significantly different from one cultural space to another. Using the second generation CHAT conceptual framework, these differences can be pointed out as outlined here.

The differences are important when considering who the *subjects* are in the two activity systems. For the Romanian system of pre-service teacher education the DTE has more of a *delivery* role in relation to the national policies for pre-service teacher education, by holding the responsibility of managing available resources in order to implement the national curriculum for initial teacher education (OMEC 4343/2005). Hence, the one responsible for the curricular decision, and therefore the actual *subject* in the activity system, is not the DTE (with all university and school – based teaching staff and students engaged in teaching and learning) as it is the Ministry of Education, Research and Youth (MECT). As part of the larger reform process taking place in the national system of education, the activity of DTE becomes the object of regulation and strict orientation by normative means (governmental bills, ministry orders and laws) under the jurisdiction of MECT who is directly responsible for establishing the contents, structure and delivery mode of the national curriculum for teacher education. Structured as such, the activity of DPPD becomes to a certain extent representative for every program of pre-service teacher education delivered through homologue state universities departments in the country. In the school-university partnership MECT placed the coordinating role on the part of the university and attributed a similar function to the School Inspectorates in the Counties in relation to the participation and roles of the schools in the partnerships concerning delivery of the national curriculum for pre-service teacher education. The Inspectorates are hence the institutions responsible for

selecting ‘model’ schools – able to host learning experiences that would facilitate student-teachers exposure to all the representative teaching and educative activities that fall under the teacher’s responsibilities. The school-university partnership is thus configured as a system where the activity is structured in two temporally distinct sequences of action, located in different institutional settings: first within the university, then within the school. Direct inter-institutional dialogue is lacking, as the intermediary in selecting ‘model’ schools is the Inspectorate of Schools in the county where the university is located.

Things are very different in the PGCE case. As pointed out earlier in the study, here working on the object of activity within the program of teacher education is an enterprise that engages in partnerships members of the university staff, teachers in partner-schools and even student-teachers who are progressively capacitated to identify and make use of all available opportunities to enhance their pedagogical agency. The tendency to centralization of national teacher education policies is visible here as well, but to a different extent than in the Romanian case. Inserted in a legislative context that passed during the past 50 years through stages of investing universities (as main spaces for scientific and theoretically grounded initial teacher education) and then schools (expected to transfer to the debutant teacher the much needed practical knowledge and skills the university alone failed to) with the responsibility of running the pre-service teacher education programs, the PGCE is presently set up as a school-university partnership where collaboration is a prerequisite for each planning, implementing or assessing action within the program. The school-university partnership is the institutional formula for which the English legislation expresses preference too and stipulates expectations concerning partners co-sharing the responsibility for planning and managing the curriculum and for selecting, teaching and assessing student-teachers. Admission in the PGCE program is an action mediated by a national institution – the Teacher Training Agency (TTA) – that candidates send applications to, stating three preferred programs where they would like their pre-service teacher education to take place. Admission is interview based, where university tutors and mentor-teachers from partner schools form panels to meet and select candidates for the program. Collaboration is thus an ingredient of the partnership from the early stages of student-teachers admission (entry) component of the program. Also a difference in structuring collaborative input of partners (*subjects*) in the activity of the two programs of pre-service teacher education is the presence – only in the PGCE case – of a set of *Standards for pre-service teacher education* (those of TTA). This is the level at which the national authority restricts its centralizing input; the road to reaching the standards with all the *who*, *when*, *where* and *how* aspects of the decision making processes remain in the sole responsibility of the partners, making the university, the school and progressively more agentic the student teachers to be the actual *subjects* in the PGCE activity system for pre-service teacher education.

In the Romanian program, the law prescribes to universities the role and coordinating responsibilities concerning initial teacher education taking place within the university component of the program, then within the one located in school, where students are expected to pursue practical sessions within the context and curricular prescriptions of the corresponding discipline in the national curriculum. The nature of school-university collaboration remains inexplicit within the legislation leaving room for the university (in its coordinating capacity) to come up with institutional policies and strategies for collaboration. For DTE this translates in configuring parameters (i.e. role dimensions, mediating instruments for assessment) for university tutors - school mentors collaboration within the practical sequence of the curriculum. The university however, remains the sole responsible institution for the admission (entry) and graduation (exit) components of the teacher education program. School are hence reduced to a more ‘guest appearance’ type of contributors to the educational program

A number of differences can be outlined in the manner in which programs conceptualize their *objects of activity*. For the Romanian case, the *object* worked upon in the system of activity is a national curriculum for pre-service teacher education for which MECT holds full decision-making responsibility in curricular aspects (selecting and organizing disciplinary learning contents, time-framing the teaching, learning and assessing processes and establishing summative assessment procedures) leaving universities and schools a mere *delivery* role of a pedagogical fix (Edwards et al. 2002) heavily building on a behaviourist epistemology of teaching and learning. The generative and transformative resources entailed in the encounter of distinct systems of activity that school and universities as institutions entail, are reduced to a minimum. The potential for innovating the program by proposing pedagogical innovations grounded in the most recent research findings is reduced insular actions within the space of the university-based component of the program and the formative effects of isolated attempts to innovative pedagogy are restricted to the limits of the formal curricular parameters of the law-bounded national program for teacher education. The experience of a quasi-experimental attempt to validate collaborative learning strategies

(being used in the space of the seminar sessions in the Pedagogy I section of the pre-service teacher education national curriculum) as an efficient teaching tool for pre-service teacher education was indicative for the difficulties in setting up successful learning experiences that lead to durable developments in students' conceptions of learning and teaching. Also illustrative for the limited formative effects of collaborative learning being used as an insular teaching tool in the space of university-based activities are the episodes of action discussed in this paper, episodes extracted from the actual pedagogical setting of the quasi-experimental research.

The PGCE program configures its *object of activity* - the pre-service teacher education curriculum – as an *agora* where partners are continuously engaged in questioning and exploring new generative resources for the improvement of current ways of reaching the TTA standards. Structured as such, the actions of the institutional partners in this program borrows something from the activity of research-development laboratories described by Engeström (1997): the unit of analysis is no longer located in one or each of the two institutional spaces forming separate systems of activity, but in the creative space between the two working on an object (problem space) in continuous transformation. The pre-service teacher education program generated in the negotiations and elaborations arising in a school-university partnership built on an epistemology of collaboration is a space for explorations opened to innovations and developments for which all partners are responsible. Collaboration itself becomes a part of the *object* upon which subjects in the activity system constantly work – a dimension of the PGCE program visible in both institutional (PGCE Course-book, 2007) and national (DfE, 1992) policies for teacher education. Students' progressive responsibility taking and professional role covering within the space of the schools where they act as interns for 2/3 of the program are guarantees for tying the learning experience within the program to the community of practice students are becoming members of. The program is, however, preventive of locking up the formative process within the space of an insular ethos: instead of being interns in just one school, student-teachers have to spend the later part of the program (last 6 weeks) within a second school where they are asked to perform increasingly complex educative roles and to reflect and compare activities in the two schools they've been interns throughout the program.

The national curriculum for pre-service teacher education implemented in Romania within specific forms of institutional organizations – The Departments of Teacher Education (DTE) located in universities accredited by the Ministry of Education – has been restructured in several occasions since 2000, in terms of its contents and duration and continues to be an object of fast-paced changes, fuelling controversy and debate in the forums of educational policy and practice. In its most recent form of implementation (since 2005), the national curriculum for pre-service teacher education preparing the working teaching force for secondary education is comprising of two curricular levels, each awarded with 30 educational credits and taking place *concurrently* (simultaneously) to the bachelor and master degrees. When looking at the learning contents, one could notice that the first bachelor degree level of study in the program takes the shape of a *disciplinary* structured course of study organized along the lines of linearly (diachronic) structured subjects such as: the Psychology of Education, Pedagogy, Didactics of subject taught, and Pedagogical Practice (taking students through observation and classroom teaching stages of practice throughout 28 weeks of study). A final portfolio based examination concludes the curricular Level and grants the graduate the possibility of teaching in lower secondary education (provided that the graduate has also obtained his/her Bachelor degree). Through its structure the program aimed at developing student-teachers' cognitive abilities and teaching skills in a *delivery & role play* type of approach to learning. The role play is for the most part of the program located in a context outside the classroom practice. The classroom based learning experience takes the shape of an insular attempt to provide student-teachers with a fragment of 'model' teaching. The whole program takes the shape of an apprenticeship experience where the students are introduced to a minimum of the current systemic practices. Actions in the activity systems take place within the space of a relevant *community* of reference. The community areas to which the system of activity directly refers to when structuring its actions and functions can be to a certain extent considered correlative to the quality policies within the system. In the case of DTE, the community is more restricted to the normative space between hierarchically structured state institutions: level 1 of authority: MECT – level 2: universities and County School Inspectorates – level 3: schools. Indirectly and with no direct possibilities to interfere with the actions within the activity system – the society at large could be considered a relevant community, by sharing the systemic interest in the object and results aimed for.

By secluding in the presumption of a pedagogical fix the object of activity – the curriculum for teacher education – MECT deprives the institutions working as deliverers of the national program of all the opportunities for systemic expansion that collaboration and shared responsibility entail. The manner of structuring the object in this particular

activity system reveals a vision of learning for which students are mere receptors of pre-established sets of learning contents, who enter the program as *tabula rasa* and are simply incapable of using the available pedagogic tools in any other way than those prescribed by the national curriculum. Tools are thus never to be questioned, explored, validated or innovated outside current prescriptions of usage. Learning is conceived as though it is possible as mere *internalization* (Vygotsky, 1978) of an unchallengeable didactic *de facto*.

The *objectivist* (Edwards et al., 2002) political visions on teacher education claiming a need for control and visibility of results in this segment of professional training are common ground for most governmental discourses at European level. Through strict legal prescriptions (that set lists of professional standards – as is the case in England – or a national curriculum for pre-service teacher education – as it is for Romania) the objectivist discourses manage to constrict the sphere of systemic expansion to the limits of only a few modes of action, far more discreet than the emergence of completely new forms of activity, as Engeström (2001) initially defined learning by expanding. For the Romanian DTE case, all documented data analyzed indicate that collaboration between the institutions engaged in the pre-service teacher education program is structured as *co-ordination* (Engeström, 1997). Pedagogical innovations – as the quasi-experimental approach to studying the effects of collaborative learning to student-teachers' conceptions of learning and teaching seems to suggest – remain insular when are being used as tools in a system of activity where all actions are pre-scripted and partners' initiatives to question and explore the current scripts are limited through powerful means (such as the law prescribing a national curriculum for teacher education). The 'complementary partnership' (Furlong et al., 2006) the school-university relation takes the shape of in the Romanian DTE case limits even more the possibility of collaboration expanding from the space of the classroom based practical pedagogical action to the larger culture of practice within the space of the partner institutions and even further over the educational philosophy that sustains the epistemology of teacher education. In this system of activity, the formative action remains secluded to the delivery of a professionalization project closed in exactly the dimension that could function as the gate to continuous expansion: a developmental project – a general profile of the type of professional the program should aim for.

Understanding collaboration as *communication* (Engeström, 1997), the UK-PGCE program proposes a partnership where all parties involved participate in *all* stages and actions of the pre-service teacher education program; structured as such participation facilitates identity development processes – at individual, institutional and inter-institutional level – that makes learning to resemble an *expansion* (Engeström, 2001) and the partnership to be characterized as authentically collaborative (McIntyre, 1997).

With a history of teacher education that covered 'intellectualist' stages of all university-based actions (a version of cognitivism severely criticized in the conservatory discourses at the end of 1970's for the lack of teacher's preparedness to respond to practical requirements of the classroom settings) and then the opposite extreme of all school-based training programs (with important negative consequences on teacher's ability to recognize and reflect on the theoretical and scientific grounds of their teaching), England is experiencing the phase of partnership formula for pre-service teacher education. Detailed explorations of partners' roles and continuous questioning of the epistemology grounding the institutional attempts to reach TTA standards for pre-service teacher education accompany this new historical stage of pre-service teacher education. Resources are sought for in the larger community, and generative resorts and self-assessment opportunities are identified in the most surprising community spaces (i.e. museums' staff working as teacher educators within the Science curricular area).

Historically familiar with tendencies to ultra-centralization of educational policies and programs, Romania aims - somewhat confused when it comes to the professional standards aimed for – at full European integration whilst maintaining under strict ministerial control the actions of all educational agents and actors – within the spaces of the universities or the schools. Pedagogical innovations and questioning are, within this context, insular attempts with little or no effects outside the space of the disciplinary syllabuses and time-units. Rhetorical question marks and passivity (objectified in learning by memorizing, observing and imitating the given) remain the key dimensions of pre-service teacher education initiatives, whether they are located within the space of the university or that of the schools.

The intentions of a comparative analysis that makes opposable two educational systems developed in such different cultural and historical contexts - as this one focusing on the Romanian and the English programs for pre-service teacher education - are far from measuring and putting together hierarchies on the value-laden axis of good and bad. Exposing by comparative analysis diverse ideologies and practices arising in different activity systems and

analyzing their effects appears to be a relevant enterprise along the lines of political desiderata like full participation to European reforms and development processes engaging *all* EU members. Collaborative work becomes essential for the fulfilment of such desiderata and, in the hope of it, outlined differences bring to light boundaries and therefore make identities visible; their honest recognition and valorisation could then entail important generative resources for identity and systemic expansion at any level.

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